

Psychology

Five Senses Basic Info Sheet

I. SIGHT

- A. 70% percent of the body's sense receptors cluster in the eyes
- B. It is mainly through seeing the world that we appraise & understand it.
- C. All the eye does is gather light.
 - 1. Lens - thins to focus on a distant object, which looks small and thickens to focus on a near one, which looks large.
 - 2. Iris – (a muscle), changes the size of a small hole (pupil), which lets light in
 - 3. Retina – Lines the rear wall of the eyeball includes two sets of photosensitive cells: rods, and cones.
 - (i) Rods report in black/white
 - (ii) Cones detect color.
- D. Seeing doesn't happen in the eyes but in the brain where the images are interpreted and meaning is associated.

II. TOUCH

- A. The skin is the largest organ of the body.
 - 1. weighs ~6-10 lbs
 - 2. 2 layers:
 - (i) Epidermis, or outer layer
 - (a) thin, scaly outer layer of the body that protects us from the outside environment.
 - (b) top layer - dead skin cells that are easily shed.
 - (ii) Dermis, or underlayer.
 - (a) The dermis protects and cushions the body.
 - (b) Includes: hair follicles, nerve endings, sweat glands, blood, & lymph vessels.
- B. Touch receptors sense pressure, pain, & temperature.
 - 1. The concentration of receptors varies
 - (i) fingertips, tongue, & lips - most sensitive areas b/c contains the greatest concentration of nerve endings.
 - (ii) The least sensitive part of your body is the middle of your back

III. TASTE

- A. Just as we can smell something only when it begins to evaporate, we can taste something only when it begins to dissolve.
- B. Adults have ~10,000 taste buds grouped at various sites in the mouth.
- C. Inside each taste bud, ~50 taste cells relay info. to the brain.
- D. Taste buds wear out every week to ten days & we replace them, although not as often over the age of 45.
- E. Our sense of taste is not as sharp as we get older.

IV. SMELL

- A. Smell is the most direct of our senses.
- B. Molecules float back into the nasal cavity behind the bridge of the nose where they are detected by receptor cells.
- C. 5 million of these cells fire impulses to the brain's olfactory bulb or smell center.
- D. If you damage nerve endings in your eyes or ears, both organs will be irreparably damaged, but the neurons in the nose are replaced about every thirty days.
- E. Smell is stored almost exclusively in the long-term memory.
 - 1. Smells stimulate learning & information.
 - 2. Edwin T. Morris noted that a list of words was recalled much more easily and retained better when olfactory information was given along with a word list.
 - 3. Like primary colors or the four basic tastes, all smells fall into a few basic categories: minty (peppermint), floral (roses), ethereal (pears), musky (musk), resinous (camphor), foul (rotten eggs), and acrid (vinegar).
- F. Only substances volatile enough to spray microscopic particles into the air have a smell.
 - 1. When you smell chocolate chip cookies, you actually smell molecules of the cookie that have evaporated.
 - 2. Each person has an odor as individual as a fingerprint.
 - 3. In the absence of gravity, molecules will not float away easily, so the sense of smell is less effective.

V. HEARING

- A. Sound is produced by vibrating objects
- B. Sound has three characteristics: pitch, quality, and loudness.
 - 1. loudness - determined by the distance from the source, the intensity of the vibration, and the surface area of the vibrating object.
 - 2. pitch - determined by the speed of the vibration.
 - (i) faster vibration - higher pitch
 - (ii) slower vibration - lower pitch.
 - 3. quality - includes those characteristics that make one sound distinct from others.
 - (i) It is the quality of a sound that allows you to tell the difference between a car, a truck, or a wagon traveling down the street in front of your house.
- C. Sound is caused by a vibration in an object that travels as a wave of molecules & ripples out in all directions.
 - 1. Waves of sound travel to our ears where they make the eardrum vibrate.
 - 2. This moves the 3 tiniest bones in our body, the hammer, the anvil, & the stirrup.
 - 3. The bones press fluid in the inner ear against membranes, which brush tiny hairs that trigger nearby nerve cells, telegraphing messages to the brain.
 - 4. The brain then interprets the meaning of the sounds we hear.